GENERAL DYNAMICS
Mission Systems

January 19, 2018

Mr. Roy Seneca
U.S. Environmental Protection Agency, Region 3
1650 Arch Street
Philadelphia, PA 19103-2029

Re: Major Source Reclassification Determination Request
General Dynamics Mission Systems, Inc.
Marion, Smyth County, VA

Dear Mr. Seneca:

Due to significant changes in Plant 1 of our Marion, Virginia operations, General Dynamics Mission Systems, Inc., (General Dynamics), is requesting a regulatory determination from the United States Environmental Protection Agency (U.S. EPA) to reclassify this facility from a major hazardous air pollutant source to an area source.

General Dynamics manufactures portable metal shelters for housing military equipment, radomes for aircraft, and other aerospace composites. The metal shelters are manufactured from spools of aluminum that are cut to size. The metal is then cleaned and a primer applied in an electrostatic spray booth and bonded. From there the parts are assembled into the shelters, painted and dried. Radomes are manufactured from fiberglass roving coated with resin that is applied to molds in shape of the nose of airplanes. The resin is cured and the radomes are coated in spray booths. General Dynamics also manufactures various aerospace parts such as doors for landing gear. The process involves placing carbon fiber cloth in molds that are injected with resin and cured.

HAP Emissions Background

Historically, the facility has been classified as a major source of emissions of volatile organic compounds (VOC) and hazardous air pollutants (HAP). HAP emissions from the operations result primarily from coating constituents applied to the shelters and radomes. Of all the organic HAP present in coating solvents, methyl ethyl ketone (MEK) has historically been emitted in the greatest quantity.

Other HAP emissions included methylene chloride used to clean the polysulfide sealant and green epoxy resin mixing heads, hexavalent chromium in dip tanks and coating, and fuel combustion in two natural gas/No. 2 fuel oil-fired boilers.

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Beginning early 2000's, General Dynamics has made material and process modifications to reduce VOC and HAP emissions. Significant changes include:

1. 2017 Replacement of hexavalent chrome with trivalent chrome in dip tanks (hexavalent chrome emissions elimination).
2. 2003 Modification to polysulfide sealant in premixed frozen cartridges (methylene chloride emissions elimination).
3. 2003 Green epoxy compound mixing heads changed to disposable plastic tubes (methylene chloride elimination).
4. 2017 Implementation of some water-based coatings in radome and shelter manufacturing (organic HAP and VOC reductions).
5. 2017 Replaced metal primer in Shelters with water based Chrome free primer (hexavalent chromium emission elimination).

Federal Regulatory Applicability

General Dynamic's Plant 1 equipment is permitted to operate as a major source of HAP and VOC per the conditions of a Stationary Source Permit To Modify and Operate (Registration No. 10050) and a federal Title V permit (No. SWRO10050) issued by the Virginia Department of Environmental Quality (VDEQ). Specific to this regulatory determination request, Plant 1's Coating Operations (CO) are subject to the requirements of two National Emission Standards for Hazardous Air Pollutants (NESHAPs).

1. The Aerospace Manufacturing and Rework (40 CFR Part 63 Subpart GG) is applicable since the process manufactures or reworks commercial, civil, or military aerospace vehicles or components and was a major source for MEK emissions. The compliance date for Subpart GG was September 1, 1998 for existing sources.
2. The Surface Coating of Miscellaneous Metal Parts and Products (40 CFR Part 40 Subpart MMMM) is applicable since the Metal Building manufacturing process involves the coating of metal components and was a major source for MEK emissions. The compliance date for Subpart MMMM was January 2, 2007 (3 years following January 2, 2004).

Major Source Applicability Determination Request

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As stated, MEK in solvent-based coatings has been the organic compound emitted in quantities greater than the 10 ton per year major source threshold resulting in the subsequent applicability of NESHAP Subparts GG and MMMM. MEK was on the original list of federal HAP but the U.S. EPA removed this compound from the HAP list on December 19, 2005. A U.S. EPA Region 4 December 21, 2006 guidance memorandum provides the avenue for facilities emitting de-listed HAP to potentially be reclassified as a minor HAP source and that a NESHAP may no longer apply in a response to the Reynolds Flexible Plant in Louisville, KY (See Attachment 1). In this memorandum, the U.S. EPA determination included the following:

> *When EPA removes (delists) a HAP from the CAA Section 112(b)(1) HAP list pursuant to the procedures specified in Section 112(b), we believe that it is appropriate to allow facilities to look back to the first substantive compliance date of the relevant Maximum Achievable Control Technology (MACT) standard and determine what the facility's potential to emit HAP on that date would have been without counting emissions of the delisted pollutant. If the results of the recalculation show that the facility's potential HAP emissions would have been below the major source thresholds on that date, and that potential HAP emissions since that date have not exceeded the major source thresholds, then EPA would consider the facility to have been an area source, rather than a major source, on the operative compliance date.*

General Dynamics Historical Actual HAP Emissions

General Dynamics has a policy to purge historical records older than 5 years. As a result, the actual HAP emissions data from the facility does not exist on site prior to 2011 in electronic or hard copy format. Detailed HAP emissions from 2011 through 2016 are presented in Attachment 2 from General Dynamics' records. An attempt was made to develop a detailed HAP emission inventory from 1998 (Subpart GG applicability) to 2011 from files available from the VDEQ Southwest Regional Office, however, such emission records also do not exist in the VDEQ files. The VDEQ files did contain the emission records the agency used to calculate General Dynamics' fees (Attachment 3) going back to 1998. General Dynamics' annual fees were based on emissions of criteria pollutants and methylene chloride. MEK was not used in the HAP fee assessment even though emissions of this compound were significant. As Attachment 3 indicates, methylene chloride was emitted over 10 tons in 1998, but less than 10 tons from 1999 through 2003. In 2003, modifications were made to eliminate the need for methylene chloride usage as indicated by 0 tons in the fee inventory from 2004 to present.

Attachment 2 is an accurate representation of General Dynamics HAP emission profile, less methylene chloride, going back to 1998. The recent change to using some water-based coatings is

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shown by the 2016 reduction in both total VOC and MEK. This trend will continue as shown with 2017's projected emissions. When MEK is not considered a HAP, facility-wide HAP emissions are below the 10/25 ton per year major source threshold. Based on this information, General Dynamics is requesting a determination by the U.S. EPA that the facility can be reclassified as an area source for HAP, no longer be subject to 40 CFR Part 63 Subparts GG and MMMM, thereby allowing General Dynamics to obtain a state-only Synthetic Minor air permit limiting total VOC emissions to less than 100 tons per year.

General Dynamics invested $1.8 million to upgrade the metal cleaning line and primer line equipment with the expressed purpose of a significant reduction in the facility's impact to the environment. We also continue to strive to maintain compliance with the requirements of our federal Title V operating permit, including timely payment of annual air permit fees. We are currently in the process of preparing an application to renew the Title V permit with assistance from a consulting firm. Re-classification of our facility to an area source, would significantly reduce future compliance costs.

If you need additional information, please let me know. I can be reached at Personal Phone / Ex. 6 or via electronic mail at Personal Email / Ex. 6

Regards,

Personal Matters / Ex. 6

Cliff Stanley
Principal EHS Specialist

Cc
Lisa Greenwood – General Dynamics
Gary Yoder – ClimeCo Corporation

Enclosures
August 26, 2008 U.S. EPA Regulatory Determination
VDEQ Emission Inventory Fee Schedule for General Dynamics
General Dynamics 2011-2016 Actual HAP Emissions

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U.S. Environmental Protection Agency
Applicability Determination Index

Control Number: M090018

Category: MACT
EPA Office: Region 4
Date: 08/26/2008
Title: MACT Applicability after HAP Is Delisted
Recipient: Luckett, Ellen E.
Author: Banister, Beverly H.
Comments:

Part 63, KK Printing and Publishing Industry

References: 63.1
63.820

Abstract:

Q: Is the Reynolds Flexible Packaging Plant (Reynolds) in Louisville, Kentucky, subject to the National Emission Standards for Hazardous Air Pollutants (HAP) for the Printing and Publishing Industry, 40 CFR part 63, subpart KK, after the compliance date if the primary HAP is delisted from the section 112(b) list of Hazardous Air Pollutants?

A: No. EPA finds that it is appropriate to allow facilities to look back to the first substantive compliance date to demonstrate that the potential to emit HAPs on that date would have been less than the major source threshold, without counting emissions of the delisted pollutant.

Letter:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA, 30303-8960

AUG 26 2008

Ellen E. Luckett, Plant Manager
Reynolds Flexible Packaging
Louisville Laminating Plant
1225 West Burnett Avenue
Louisville, Kentucky 40210

Dear Ms. Luckett:

This is in response to your letter dated May 15, 2008, formally requesting a determination of whether the Reynolds Flexible Packaging Plant (Reynolds), located in Louisville, Kentucky, continues to be subject to the National Emission Standards for Hazardous Air Pollutants (HAP) for the Printing and Publishing Industry in 40 CFR 63, Subpart KK. The Reynolds plant operates eight laminators and two

coating operations that have been subject to Subpart KK. According to your letter, the Reynolds plant was a major source and, therefore, subject to Subpart KK due to potential HAP emissions of methyl ethyl ketone (MEK). Because the Environmental Protection Agency (EPA) delisted MEK from the list of Clean Air Act Section 112(b)(1) HAPs in 2005 (6 years after the compliance date of Subpart KK), Reynolds states that it no longer meets the definition of a major source of HAPs1 and is requesting a formal determination regarding whether the Louisville facility remains subject to Subpart KK.

In support of your request, Reynolds has submitted a summary of the annual emissions of MEK, and also of total non-MEK HAPs, for the years 1999 through 2007. These emissions data represent actual HAP emissions from the compliance date of Subpart KK (i.e., 1999) to the present. The data provided with your letter show that actual emissions of MEK exceeded the major source threshold of 10 tons per year of an individual HAP for the years 2000 and 2004 (10.03 and 13.78 tons per year respectively). However, when considering only the non-MEK HAPs, the data show that actual HAP emissions did not exceed the major source threshold of 10 tons per year for a single HAP (highest emission is 4.76 tons for the year 2000) or 25 tons per year for a combination of HAPs (highest emission total being 9.56 tons for the year 2000).

When EPA removes (delists) a HAP from the CAA Section 112(b)(1) HAP list pursuant to the procedures specified in Section 112(b), we believe that it is appropriate to allow facilities to look back to the first substantive compliance date of the relevant Maximum Achievable Control Technology (MACT) standard and determine what the facility's potential to emit HAP on that date would have been without counting emissions of the delisted pollutant. If the results of the recalculation show that the facility's potential HAP emissions would have been below the major source thresholds on that date, and that potential HAP emissions since that date have not exceeded the major source thresholds, then EPA would consider the facility to have been an area source, rather than a major source, on the operative compliance date. In this circumstance, the affected source would no longer be subject to major source MACT requirements. Because the emissions data you have provided is based on actual HAP emissions, and the Clean Air Act distinguishes between major sources and area sources on the basis of potential emissions, you will need to provide us with documentation of your potential non-MEK HAP emissions on May 30, 1999, as well as your potential non-MEK emissions at all times since that date. Your calculation of potential non-MEK HAP emissions should take into consideration any federally enforceable limitations that result in reductions in potential HAP emissions that were in place on the MACT compliance date. Limitations on emissions of non-HAP compounds (e.g., volatile organics) may be acceptable provided that it can be demonstrated that those limitations also effectively limit HAP emissions. Once we receive the additional information, we will respond to your request for a detem1ination regarding the continued applicability of Subpart KK.

This response was coordinated with EPA's Office of Air Quality Planning and Standards and the Office of General Counsel. If further assistance is needed, please contact Lee Page of the EPA Region 4 staff at (404) 562-9131.

Sincerely,

Beverly H. Banister

Director
Air, Pesticides & Toxics
Management Division

cc: Lauren Anderson, Executive Director
Louisville Metro Air Pollution Control District

1 A major source of HAP emissions emits or has the potential to emit considering controls, in the aggregate, 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants. (See, CAA section 112(a)(1)).

CEDS Emissions Inventory Data
Registration No. 10050

Year	Fee HAPs	NOX	VOC	SO2	CO	PB	PM 10	PM 2.5	MC	PM
1998	14	3.44	91.0716	0.1224	0.855	0	2.351		14	2.35176
1999	5	0.95	45.1064	0.02574	0.5265	0	1.157412		5	1.184372
2000	5	0.61	42.15335	0.77694	0.3		1.100324		5	1.128624
2001	6	0.538	48.06016	1.15042	0.1345		0.0906		6	0.14055
2002	7	4.48	45.1916	1.152	1.12		0.457	0.457	7	1.353
2003	6.4	5.07	52.81877	0.99925	1.2675		0.510464	0.377229	6.4	1.634976
2004	0	5.39	70.7458	0.462	1.3475		6.48935	0.509848	0	1.833348
2005	0	5.53	59.7306	0.237	1.3825		15.03789	0.249001	0	1.92811
2006	0	5.12	67.6823	0.1222	1.28		8.103156	8.102091	0	9.452976
2007	0	4.76	38.45	0.0204	1.19		5.924	5.924	0	5.924
2008	0	4.781	28.93021	0.1695	1.19525		4.11905	4.118126	0	0.221465
2009	0	3.305	40.40005	0.0541	3.04525		2.077605	2.077385	0	2.079255
2010	0	3.25	30.37875	0.0198	2.75		1.452	1.452	0	1.452
2011	0	3.034	38.03372	0.018204	2.54856		1.537184	1.537184	0	1.537184
2012	0	3.4775	59.48126	0.020865	2.9211		1.68549	1.68549	0	1.68549
2013	0	5.26585	84.11002	0.031611	4.41894		2.232906	2.232906	0	2.232906
2014	0	4.7499	81.71118	0.02847	3.989		2.14432	2.14432	0	2.14432
2015	0	4.771	80.67522	1.15665	3.97155		1.96955	1.962554	0	2.02202
2016	0	4.7538	52.31503	1.02167	3.9316		1.91712	1.91096	0	1.96332

General Dynamics

Air Permit No. 10050

VOC & HAP Emissions

Regulated Compounds		2011	2012	2013	2014	2015	2016	2017[1]
VOC	(tpy)	37.64	59.29	83.82	81.45	80.42	52.06	25.26
HAPs-Total	(tpy)	3.80	4.90	6.90	4.80	5.20	4.40	3.70
MEK	(tpy)	20.10	29.00	42.90	42.50	44.80	26.80	10.30
Toluene	(tpy)	0.67	0.69	0.86	0.58	0.44	0.31	0.50
Xylene	(tpy)	0.56	0.91	1.12	1.11	1.33	1.14	1.30
MIBK	(tpy)	1.00	1.18	2.04	1.66	1.58	1.47	1.20
Chromium VI	(tpy)	5.00E-04	1.00E-03	1.30E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
HDI	(tpy)	1.00E-04	2.00E-04	1.00E-04	7.90E-03	8.50E-03	6.20E-03	6.30E-03
TCE	(tpy)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Methylene Chloride	(tpy)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2-Ethoxyethanol	(tpy)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Strontium Chromate	(tpy)	6.00E-03	1.30E-03	1.70E-03	3.60E-03	3.30E-03	2.20E-03	9.00E-04
Chromium III Oxide	(tpy)	0.00E+00	0.00E+00	1.00E-03	1.00E-03	4.00E-03	1.00E-03	1.00E-03
Cadmium	(tpy)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cobalt	(tpy)	0.00E+00	0.00E+00	1.00E-04	3.00E-04	2.00E-04	2.00E-04	2.00E-04
Epichlorohydrin	(tpy)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ethylbenzene	(tpy)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MDI	(tpy)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Methanol	(tpy)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Note:

1. 2017 emissions are estimated using actual data for January through August, and estimated data for September through December.